

6.RP Price per pound and pounds per dollar

Task

The grocery store sells beans in bulk. The grocer's sign above the beans says,

5 pounds for \$4.

At this store, you can buy any number of pounds of beans at this same rate, and all prices include tax.

Alberto said,

"The ratio of the number of dollars to the number of pounds is 4:5. That's \$0.80 per pound."

Beth said,

"The sign says the ratio of the number of pounds to the number of dollars is 5:4. That's 1.25 pounds per dollar."

- Are Alberto and Beth both correct? Explain.
- Claude needs two pounds of beans to make soup. Show Claude how much money he will need.
- Dora has \$10 and wants to stock up on beans. Show Dora how many pounds of

beans she can buy.

d. Do you prefer to answer parts (b) and (c) using Alberto's rate of \$0.80 per pound, using Beth's rate of 1.25 pounds per dollar, or using another strategy? Explain.

IM Commentary

This task could be used by teachers to help students develop the concept of unit rates. Its purpose is to help students see that when you have a context that can be modeled with a ratio and associated unit rate, there is almost always another ratio with its associated unit rate (the only exception is when one of the quantities is zero), and to encourage students to flexibly choose either unit rate depending on the question at hand.

Item (d) admits many different answers and is intended to prompt a teacher-facilitated discussion of different student strategies (and so should likely be removed or reworded for assessment purposes, depending on the type of assessment involved). A productive discussion could develop around side-by-side comparisons of strategies that apply Alberto's rate and strategies that apply Beth's rate.

Solution

(a) Alberto and Beth are both correct. Their rates could be illustrated with a double number line or a ratio table like the following:

Pounds	Dollars
1	.80
1.25	1
2.5	2
5	4

(b) Double the quantities in Alberto's rate to find the price of two pounds:

Pounds	Dollars
1	.80
2	1.60

(c) Starting from Beth's rate and multiplying both quantities by ten shows the number of pounds that can be purchased for 10 dollars:

Pounds	Dollars
1.25	1
12.50	10

(d) Answers may vary. We can efficiently answer part (b) using Alberto's rate and part (c) using Beth's rate.



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